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ABSTRACT

This paper reports findings from a longitudinal study that investigated ways in which a comprehensive youth development program could support social and academic competence and reduce aggression in middle childhood for students living in public housing. Children residing in public housing complexes in southern California who participated in a 4H Afterschool Activities Program were compared with another group of resident children who did not participate in 4H. Measures of perceived academic and social competence were completed by the students, their teachers, and their primary caretakers. The results demonstrated the stronger program effects for perceived behavioral competence than for academic competence. Findings are discussed in terms of the need for explicit programmatic emphasis on the development of academic competence in participants, similar to the current program emphasis on school appropriate behavior. (Contains 7 figures and 27 references.) (JDM)

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Running head: PERCEIVED BEHAVIORAL AND ACADEMIC COMPETENCE

Perceived Behavioral and Academic Competence in Middle Childhood: Influences of a Community-Based Youth Development Program

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Abstract

The current study reports findings from a longitudinal project that investigated ways in which a comprehensive youth development program might support social and academic competence and reduce aggression in middle childhood for students living in public housing. I compared children residing at two public housing complexes in southern California who participated in the 4H Afterschool Activity Program with another group of resident children who were not 4H members (N = 86). Measures of perceived academic and social competence were completed by the students, their teachers, and their primary caretakers. Results demonstrated stronger program effects for perceived behavioral competence than for academic competence. Findings are discussed in terms of the need for explicit programmatic emphasis on the development of academic competence in participants, similar to the current program emphasis on school appropriate behavior.

Perceived Behavioral and Academic Competence in Middle Childhood: Influences of a Community-Based Youth Development Program

Youth residing in public housing confront a host of challenges to their academic and social success, as well as to their very safety and survival. Families who are eligible for public housing are by definition at the very bottom of the SES spectrum and often are people of color. Thus, their children typically experience the plethora of social injustice and educational risk factors that have been so frequently documented for poor, ethnic minority children living in urban areas (e.g., poorly equipped schools, poorly prepared teachers, disproportionate placement in special education, limited parental presence at school) (Irvine, 1990).

Achievement and Social Status

These societal and educational risks often lead unsurprisingly to poor educational outcomes. SES alone is one of the most influential factors in students' academic success. Poor children simply do not fare as well academically as their more affluent peers. For example, reading achievement scores differ by an average of 30 points across all levels of secondary school between more affluent students and their economically disadvantaged peers (NCES, 1999). Science achievement, a critical indicator for those students preparing to enter the "new economy", presents a picture that is even more bleak. Disparities in measures of

science achievement for high and low SES children range from 36 points in middle school to a whopping 50 points by high school (NCES, 1999).

Low income children of color are particularly likely to achieve at less than their full potential when measured by traditional indices (e.g., standardized test scores, GPA's, college entrance and completion) (Irvine, 1990). African-American and Latino students in particular are more likely to experience high rates of early school leaving (NCES, 1999) and teen pregnancy (NCHS, 1995)). Those children who do persist in school are too often denied access to advanced coursework that develops higher-level reasoning and complex problem-solving skills (Mullis, Owen, & Phillips, 1990). As well, children of color are more likely to experience a high incidence of problem behavior in the schools, as both victims and perpetrators (Hudley, 1995). Finally, residence in public housing presents the additional risks of exorbitant rates of delinquent behavior, interpersonal violence, and drug sales (Sexton & Holloway, 1994; Dunworth & Saiger, 1994).

Social and economic isolation, high rates of violence, easy availability of drugs, early sexual experience, and minimal academic success all combine to pose a cumulative and highly toxic set of risk factors for African-American and Latino youth living in public housing. Middle childhood is perhaps the most vulnerable period of human development for the establishment and maintenance of appropriate patterns of school achievement and social adjustment (Brooks, 1984).

Therefore, experiencing these devastating conditions during middle childhood can create developmental pathways to adult dysfunction that represents enormous social costs and needless waste of human capital. Most problematic, beyond middle childhood these developmental pathways are progressively more difficult to alter. Clearly, elementary school age, African-American youth living in public housing are a compelling population for preventive intervention.

Perceived Competence in a Hostile Environment

Sustaining achievement motivation and school appropriate behavior can be especially challenging in the daunting environment of public housing. At the same time, these are defining features of school success, a necessary outcome for enhancing the future life chances of these children who lack the implicit privilege that accrues to their more affluent, White peers. Thus, one clear task for research is to increase our understanding of factors that support school success among this population. The factors examined in the research reported here include perceptions of social and academic competence, as well as competent social reasoning.

Harter's developmental model (1978, 1992) postulates that all young children experience the need to master their environment. These initial mastery urges lead to a range of behaviors across multiple domains, including school. Behaviors that produce success experiences, perceptions of control over the environment, and positive environmental

feedback yield positive perceptions of competence. As they mature, children with high perceived competence for a given activity or domain will be subsequently motivated to persist in mastery attempts for that activity or domain. Alternatively, behaviors that produce failure experiences, feelings of lack of control over the environment, and negative environmental feedback will lead to negative perceptions of competence. Low perceived competence should suppress motivation and mastery attempts. Consequently, the study of perceived competence in middle childhood should have much to tell us about the achievement motivation and school adjustment of children living in a hostile social environment.

Transactional models of human development (e.g., Bronfenbrenner, 1979; Jessor, 1993) have pushed the discipline of developmental psychology to more directly address the social environment of human actions in ways that were once more typical of social science disciplines other that psychology. An evolving paradigm of developmental science (Cairnes, Elder, & Costello, 1996) emphasizes the necessity of attending to multiple perceivers across multiple points in time, with explicit awareness of the social context. This paradigm should provide a more situated and comprehensive understanding of social behaviors, particularly among populations who have been largely ignored by traditional research in psychology (Graham, 1992).

The Preventive Intervention

The project reported here employed multiple perceivers inside and outside of public housing to assess the role of preventive intervention strategies in supporting perceived competence and school appropriate behavior among children in elementary school. The intervention strategies comprised the 4H Youth Development Afterschool Activity Program (ASAP) in conjunction with a specific aggression reduction curriculum, the BrainPower program (Hudley, 1994).

Youth development intervention. The 4H Youth Development program (ASAP) has been providing after school activity programs in Los Angeles County since 1983. The ASAP enrichment program serves youth (ages 8-12) residing in public housing in Los Angeles County with 25 inner city sites, housed predominately on-site in public housing projects or in the schools that serve these communities. These programs, serving anywhere from 20-40 students per site, meet five days a week, 50 weeks a year between the hours of 2 and 6 pm.

The site programs are operated by a Site Supervisor, Vista Volunteers, and volunteers from the housing project or community served by the program. Families voluntarily choose to participate in the after school program, although many are referred by school personnel and mental health agencies. Primary caretakers of participants are expected to contribute a minimum of 3 hours per week; many residents volunteer considerably more time. The long term goal of the 4H program

is to develop prosocial competence and a sense of community among its participants, both children and their primary caretakers.

Site staff plan and deliver a range of academic and recreational community based activities. All sites provide 90 minutes of homework assistance and 30 minutes of recreation activities per day, as well as a range of site-specific projects related to consumer education, creative arts, community development, and field trips to cultural and recreational venues outside of the residents' own communities. These activities offer multiple opportunities for participants to experience academic and social success as well as a sense of participation, ownership, and control over their own communities. For example, one 4H site designed the playground that currently serves both the on-site preschool and their own program. The City of Los Angeles accepted the design and constructed the playground, with appropriate awards and media attention for the accomplishments of the student designers. All 4-H activities are delivered in a cooperative learning environment that fosters teamwork, leadership, and responsibility.

The 4H administrative staff, employed by the University of California Cooperative Extension, engage in active community outreach and recruitment in conjunction with the elementary schools, the public welfare offices, and the city Housing Authority. In addition, Extension staff provide staff training, program management, and administrative support for the 25 sites.

Aggression reduction curriculum. During the Fall of 1998, the 4H ASAP program implemented the BrainPower program, an attributionally based intervention curriculum that is designed to reduce children's inappropriate aggression. The intervention comprises three components.

The primary component strengthens children's ability to accurately detect the intentions of others. The intervention program focuses entirely on peer directed social behavior and uses situations that are familiar and relevant to the lives of the participants. Prior research has convincingly demonstrated that highly aggressive children often incorrectly attribute deliberately hostile intentions to peers (see Hudley, 1994a for a review). For example, if asked to imagine being bumped by a peer while walking in the hallway at school, excessively aggressive children assume that the bump was "on purpose" more than twice as often as a less aggressive peer (Graham, Hudley & Williams, 1992; Hudley & Graham, 1993).

Through role play, discussion of personal experiences, and activities conducted outside of the intervention classroom, participants are trained to search for, interpret, and properly categorize verbal and behavior cues of others. For example, children practice identifying intent from facial expressions and videotaped interactions. In mid-childhood, children have typically not achieved adequate levels of social interpretation and insight (Rizzo, 1989); thus, practice in reading the social landscape can be especially beneficial.

After the participants gain skills in reading social cues, they learn in the second component of the intervention to associate ambiguous cues with attributions to accidental causes. For example, children role play an ambiguously caused negative social situation (e.g., a peer spills milk on you in the lunchroom). The group then brainstorms possible causes and decides which causes are more likely. Prior research has consistently found that, in ambiguous situations such as this example, highly aggressive boys typically make social decisions quickly, ignore available social cues, and endorse retaliatory aggression (see Hudley, 1994a for a review).

The third intervention component allows participants to practice appropriate behavioral responses to ambiguously caused negative outcomes. For example, children read and role play vignettes of ambiguously caused negative situations with peers. They subsequently generate decision rules about when to enact appropriate nonhostile responses (e.g., "When I don't have the information to tell what that person meant, I should start to think this happened by accident").

My earlier research (Hudley, 1994b; Hudley et al., 1998; Hudley & Graham, 1993) presented perhaps the first published data to demonstrate a causal relationship between social information processing, anger, and aggression. In those projects, the curriculum was able to significantly reduce inappropriate attributions of hostility and subsequent aggressive behavior in a school setting. However,

attrributional change is but a single process linked to aggressive behavior. There is clear evidence that multiple interpersonal processes contribute to the display of peer-directed aggression (Crick & Dodge, 1994).

Initially isolating attributional change as a starting point permitted a direct evaluation of the efficacy of a social cognitive intervention as well as a direct test of the theoretical relationship between cognition and behavior. Ultimately, however, the program will be most effective as one part of a comprehensive intervention to support the healthy development of children, families, and communities. Thus, a logical next step in the development of the BrainPower Program is to examine its effects in the context of a larger program of youth development

The Current Study

The 4H program has now adopted this aggression reduction curriculum. The programmatic goal of 4H is to nurture and develop in each participant a range of intellectual and social skills in a secure, supportive environment. The BrainPower curriculum is more precisely focused on developing appropriate interpersonal behavior. This paper reports findings from a longitudinal project that investigated ways in which a comprehensive program might support social and academic competence and reduce aggression in middle childhood.

Given the multiple risk factors present in residents' lives, placing youth development and aggression reduction activities into communities

of public housing is an especially stringent test of the efficacy of intervention and prevention activities. However, the context is particularly effective in affording youth at highest risk for antisocial outcomes ready access to programs and services. This comprehensive model of youth development programming to support behavioral competence and academic engagement, implemented in high risk populations during middle childhood, had not been satisfactorily assessed, particularly among the population residing in public housing.

Research questions. This study examined whether the aggression reduction curriculum, used as universal preventive intervention with boys and girls in an after school setting, combined with the 4H Youth Development Program, would forestall the development of high levels of aggression and support perceptions of academic competence. It was hypothesized that 4H participants would rate their own social behavior and academic competence more positively that non-participants. As well, 4H participants were expected to display more competent social reasoning skills, as measured by inappropriate attributions and attitudes toward aggression. I further anticipated that teachers would perceive 4H students as more academically competent and that both primary caretakers and teachers would rate 4H participants' behavior more positively. The 4H program may serve as an overall protective buffer against risk factors present in the environment, while the aggression reduction curriculum

may specifically train children in appropriate, successful ways to interact with peers.

Method

Subjects and Setting

Participants (N=86) were children residing at two public housing complexes in southern California. One complex is located in the central city, separated from the downtown area by an industrial district. The other is located south of the central city in a residential area. Both complexes are a series of 2-story apartment buildings, housing over 1000 residents, approximately 65% of which are children. The complexes are roughly 33% African-American, 33% Latino, 25% white, and 9% other (Asian and native American). More that 80% of all households have annual incomes less than $20,000, and the average family size is 3.1.

Children attending the 4H Afterschool Activity Program comprised the 4H group (n=46). We included all 4H children, both boys and girls, who participated in at least 75% of the BrainPower activities and were present for all data collection activities at 6 month and 12 month followup. Children living in the same public housing complexes and attending the same elementary schools but not the afterschool program were the pool from which we drew a comparison group. Comparison students (n=41) were matched on ethnicity, age, grade, and work habits and cooperation grades.

Students were relatively evenly distributed by gender across the two sites (n=44 and n=42 for boys and girls respectively); however, cell sizes differed significantly by gender and group $\chi^2(1, N = 86) = 7.24$, $p<.01$. For boys, the 4H group was smaller than the comparison group (17 vs. 27), while for girls the reverse was true (29 4H vs.13 comparison group). The sample was 93% African-American (n = 80). Children's ages ranged from 7 to 11 years, with 80% of the sample falling between the ages of 8 and 10. Mean ages were 9.30 for the 4H group and 9.28 for the comparison group. Age did not differ significantly by group, site, or gender.

Measures

Participants completed the student form of the Social Skills Rating System (Gresham and Elliott, 1990), which measures self-perceived self-control and externalizing behavior in classroom and peer settings on a scale from 0 ("never) to 2 (usually). Higher scores indicate greater perceived self control. This instrument contains items appropriate for both girls' and boys' reactive aggression (e.g., I control my temper when people are angry with me). They also completed a modified version of the Self-Perception Profile for Children (Harter, 1985), which assesses perceptions of academic and social competence on a scale of 1 to 4, with higher scores indicating greater self perceptions of competence. Children's intentionality beliefs were assessed with an instrument that included 5 hypothetical scenarios of negative peer interactions with 6

accompanying questions assessing intent judgments ("do you think the person meant to do that", 3 questions), felt anger ("how mad would you be", 2 questions), and preferred response selected from a set of alternatives ranging from "do something nice" to "have it out right then and there" (1 question). Higher scores indicate greater perceived hostility. Students also completed a measure designed for this research program consisting of 15 questions directly tapping beliefs about the appropriateness of aggressive behavior ("it's ok to hit someone if they insult you"). Responses were measured on a scale of 1 to 6, with higher scores indicating greater endorsement of aggressive behavior.

Teachers and primary caretakers completed the corresponding version of the Social Skills Rating System (Gresham & Elliot, 1990), which also rates perceived academic and behavioral competence on a scale of 0 to 2. Teacher ratings of behavioral competence were summed across 10 items for a maximum possible score of 20; academic competence scores were summed across 20 items for a maximum possible score of 40. Parent ratings of behavioral competence were summed across 10 items for a maximum possible score of 20. All teachers were blind to students' intervention group status; however, primary caretakers were not. Family characteristics were collected with a demographic survey completed by caretakers.

Procedures

Trained 4H staff conducted attributional intervention groups of eight students. Males and female intervention groups were conducted separately in order to best fit the intervention stimulus material to the subject groups and to most accurately interpret the resultant effects. Prior research suggests possible differences in the kinds of aggression displayed as a function of gender (Cairnes, Cairnes, Neckerman, Ferguson, & Gariepy, 1989; Whiting & Edwards, 1988), as well as differences by gender in the types of situations which elicit aggressive retaliation (Crick & Grotpeter, 1995; Feldman & Dodge, 1987). Thus the specific intervention activities were separately tailored to best address the experiences of boys and girls.

The typical 4H activities (previously described) also continued while the aggression reduction curriculum was presented. Thus, all study participants simultaneously received aggression reduction activities as well as the youth development activities. Data were collected prior to the implementation of the BrainPower program and at six month and 12 months after implementation.

Results

The analysis reported here examined changes in scores on relevant measures across three time points: pre-aggression curriculum, 6 month, and 12 month follow up. Scores were examined in repeated measures

ANOVAs, with gender as a between subjects factor and time of measurement as the repeated factor.

Participants' self- perceptions. Students rating of their own behavioral self control differed significantly only by main effect of group ($F[1, 80] = 3.80$, $p = .05$). Although interactions with gender and time were not statistically significant, an inspection of means reveals that while comparison group students' perceived self control declined steadily, 4H students perceived self control tended to increase slightly (See Figure 1) and remained above comparison group means. Overall, group membership explained 12% of the variance in perceived self control.

For perceived academic competence, the repeated time factor was again not significant. However, univariate analyses of self-perceived academic competence revealed a trend at time 1 ($F[1, 83] = 3.50$, $p < .07$) favoring 4h students. A significant group difference emerged at time 2 ($F[1, 80] = 7.82$, $p < .01$) in favor of 4H students, with 13% of the variance explained by group. At time 3 a trend emerged for a group X gender interaction ($F[1, 78] = 3.53$, $p = .07$), which explained 10% of the variance in scores. While 4H girls reported higher perceptions of academic competence than comparison students, ratings for 4H boys declined by Time 3 (see Figure 2).

Participants social reasoning. Scores on the measure of children's intentionality were summed across the 3 questions of intent for all 5 scenarios, for a composite index of 15 specific items. Analyses revealed a

significant interaction of time X group X gender ($F[1, 75] = 4.41$, $p = .05$), with 15% of the score variance explained. Means reveal that both boys and girls in 4H declined steadily in inappropriate perceptions of hostile intent. For the comparison group, boys' scores increased and remained higher than 4H students, while girls' scores declined to levels comparable to 4H boys and girls (see Figure 3). Attitudes about the appropriateness of aggressive behavior also revealed a trend for the interaction of time X group X gender ($F[1, 75] = 3.03$, $p = .06$), with 11% of the score variance explained. Boys in the 4H program declined, while comparison boys stayed steady at levels higher than the 4H boys. Girls in the 4H group increased slightly, while comparison girls increased their endorsement of aggression to rates higher than that for boys (see Figure 4).

Teacher Perceptions

Teacher ratings of behavioral self control revealed a trend for the interaction of time X group X gender ($F[1, 74] = 4.11$, $p = .06$), with 20% of the score variance explained. Both boys and girls in 4H improved over time. Comparison girls also improved; comparison boys' scores declined consistently (see Figure 5). Teacher ratings of academic competence did not differ significantly by group, time, or gender. An inspection of means reveals that teachers rated girls overall slightly higher in academic competence, and comparison girls received the highest ratings of any group (see Figure 6).

Parent Perceptions

Parent ratings were analyzed for pre-assessment and 6 month follow up only. Insufficient numbers of ratings were returned at 12 month follow up to make meaningful comparisons. Parent ratings of cooperation differed significantly only by group ($F[1, 67] = 25.65$, $p > 01$), in favor of 4H students (see Figure 7).

Relationships among Indicators

I also examined the relationships among similar indices gathered from multiple perceivers, using correlational analyses. Correlations were computed separately for 4H and comparison students. Teacher ratings of behavioral self control at Time 1 and student self perceived behavioral self control at Time 3 were related for both groups; the relationship was stronger for 4H ($r = .68$, $p<.01$) than for comparison students ($r = .45$, $p<.05$). Time 2 teacher ratings of behavioral self control were concurrently related to 4H students ratings of perceived intent ($r = .72$, $p<.01$); these measures were unrelated for the comparison group ($r = .14$, ns). No other measures of student and teacher ratings were related.

Parent measures of cooperation at Time 2 were concurrently related to student attitudes about aggression ($r = .64$, $p<.01$) for 4H students but not for comparison students ($r = .17$, ns). Finally, parent and teacher measures were unrelated.

Discussion

Behavioral Competence

This project represents the first time the BrainPower intervention has been used as a universal preventive program with both boys and girls. Preliminary analyses of these data at 6 months (Hudley, 1999) suggested that the 4H program was effective as a protective factor for students in a high risk environment. In that analysis, a subset of students at highest risk (those chronically absent from school) were perceived as having significantly fewer behavior problems if they attended the afterschool program regularly.

The current analyses continue to support the behavioral efficacy of the combined, universal program. The program seemed to counter for all 4H students a naturally occurring decrease in self-perceived behavioral competence. Program participants maintained more positive perceptions of their own behavior, and the effect was particularly beneficial for boys. Teachers and parents also perceive the behavior of 4H students more positively; this program effect was strongest for teacher ratings of boys but parent ratings of girls. Teachers and parents may have differing perceptions of appropriate behavior, an interpretation supported by the lack of a relationship between teacher and parent measures of perceived student behavior. Teachers may be more sensitive to the program's effect on boys' ability to behave in a school appropriate manner, while parents may be more responsive to the program's ability to shape their daughters' socially appropriate behavior in family and home settings.

Overall, the BrainPower Program seems to be a promising vehicle for providing specific training in improved social behavior when presented as a universal intervention in combination with the general protective benefits of the youth development program.

Relations among behavioral variables. For the first time, concurrent relationships are apparent between 4H students' social reasoning and both parents and teachers perceptions of students' behaviors. These relationships suggest that competent social reasoning skills are reflected in more positive social behavior. Although students' social reasoning and self-perceptions of their own behavior were unrelated, teacher perceptions were also prospectively related to all students' perceptions of their own behavior.

Prior research has found that aggressive boys do not perceive their own behavior accurately (Lochman, 1987), and their perceptions are not based on their actual behavior but on their expectations (Lochman & Dodge, 1998). However, other research (Hudley, 1993; Hudley et al., 2001) suggests that teacher perceptions may also be subject to bias. Thus, one interpretation of the current data might be that teachers evoke more positive behavioral self-perceptions from those students whom they perceive to be behaving appropriately, and more negative self-perceptions from those students they perceive to be behaving inappropriately. The mechanism through which teacher perceptions influence student self-perceptions might be student expectations.

Academic Competence

The program's effect on perceived academic competence is more mixed. Although 4H students, particularly girls, perceived themselves to be more academically competent than comparison students at all time points, teachers' ratings did not differ by group. Further, teacher and student ratings of academic competence were unrelated. These data do suggest that 4H students, girls in particular, should be likely to persist in academic pursuits. This interpretation is consistent with the literature suggesting that among traditionally underachieving students of color, girls are more likely to persist in schooling, while boys are more likely to leave school prior to completing high school (NCES, 1999).

The improvements in social reasoning and behavior may be a function of the special program emphasis on appropriate behavior (i.e., the BrainPower program). These data suggest that the 4H ASAP program may need to develop similar program initiatives that explicitly emphasize academic competence. Bringing teachers, parents, and community-based programs together to advocate for and support children's achievement motivation is demonstrably the appropriate next step for children who must develop to adulthood in adverse circumstances.

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Figure 1

Student Perceived Self Control

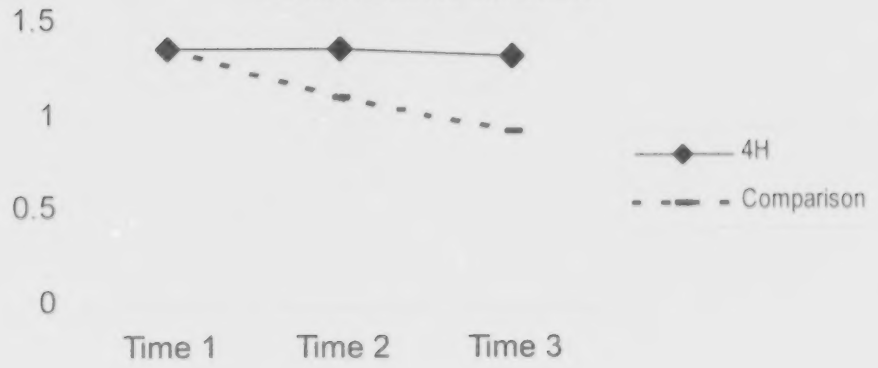

Figure 2

Student Perceived Acad Competence

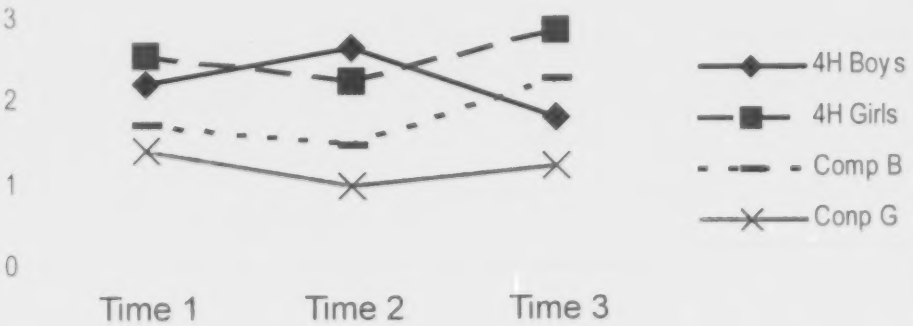

Figure 3
Social reasoning - Attributions

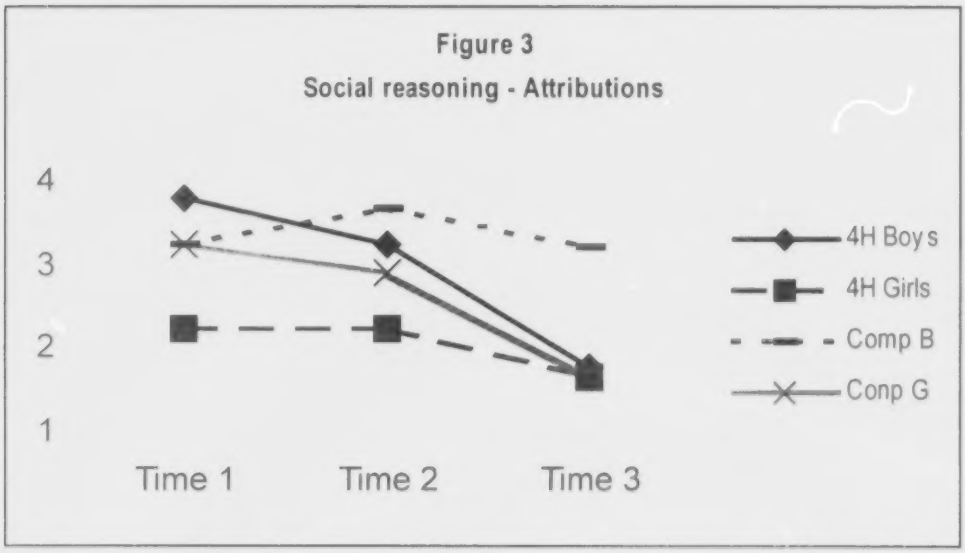

Figure 4
Social Reasoning - Aggression

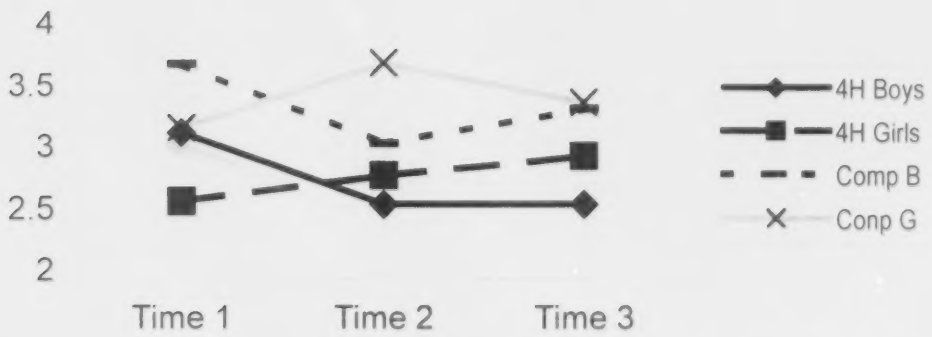

Figure 5 Teacher perceived behavior

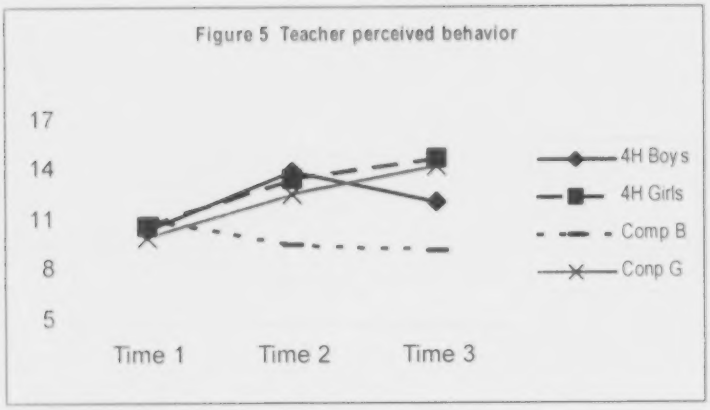

Figure 6 Teacher perceived Academic Competence

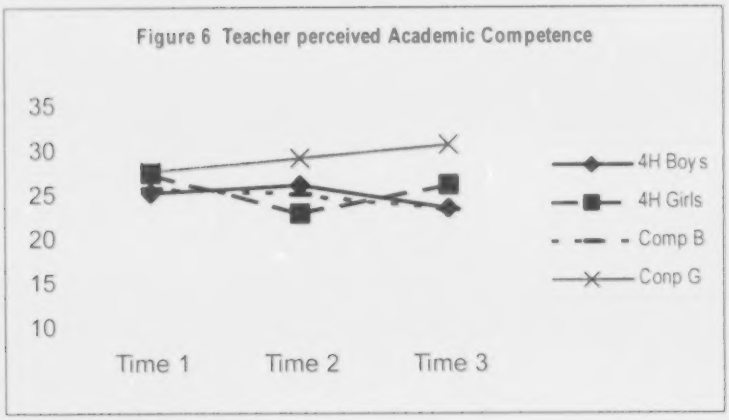

Figure 7 Parent Perceived Behavior